cence, an avidin-biotin peroxidase system can be used for virus detection and for evaluation of the titrations similar to Example 23 (multiplication of picornaviruses described for hepatitis A virus).

The invention claimed is:

1. A method for production of a virus or a protein produced from the virus for use in manufacture of a viral vaccine on a commercial scale, comprising:

(a) increasing the volume of a suspension culture of Madin-Darby Canine Kidney (MDCK) cells in a serum-free medium, a protein-free medium, or a chemically defined medium, in a fed-batch system by diluting with fresh medium to the suspension culture to increase its volume to at least 1000 L without removal of the original medium, wherein the fresh medium is added to the original medium to increase the volume of the suspension culture to the at least 1000 L such that the dilution is 1:10 to 1:2 original medium to fresh medium,

(b) infecting the MDCK cells in the at least 1000 L volume with the virus,

(c) propagating the viruses in the MDCK suspension culture, and

(d) isolating the viruses or a protein produced from the viruses from the cell culture, wherein the virus is selected from the group consisting of an adenovirus, orthomyxovirus, paramyxovirus, reovirus, picornavirus, enterovirus, flavivirus, herpes virus and pox virus.

2. The method according to claim **1**, wherein the MDCK cells in the suspension culture originate from the cell line MDCK 33016.

3. The method according to claim **1** or **2**, wherein the virus selected is a dsDNA, RNA(+), or RNA(−) virus and is an adenovirus, orthomyxovirus, paramyxovirus, reovirus, picornavirus, enterovirus, flavivirus, herpes virus or pox virus.

4. The method according to claim **1** or **2**, wherein the cells are cultured in a chemically defined medium before infection and in a protein free medium after infection.

5. The method according to claim **1** or **2**, further comprising purifying the virus by Cellufine Sulfate (CS) chromatography and/or ultracentrifugation in a sucrose gradient.

6. The method of claim **1** or **2**, wherein the vaccine is mixed with an appropriate adjuvant, auxiliary, buffer, diluent or drug carrier.

7. A method for production of a virus or a protein produced from the virus for use in manufacture of a viral vaccine on a commercial scale, comprising:

(a) increasing the volume of a suspension culture of Madin-Darby Canine Kidney (MDCK) cells in a serum-free medium, a protein-free medium, or a chemically defined medium, in a fed-batch system by diluting with fresh medium to the suspension culture to increase its volume to at least 1000 L without removal of the original medium, wherein the fresh medium is added to the original medium to increase the volume of the suspension culture to the at least 1000 L such that the dilution is 1:10 to 1:2 original medium to fresh medium,

(b) infecting the MDCK cells in the at least 1000 L volume with the virus,

(c) propagating the viruses in the MDCK suspension culture, and

(d) isolating the viruses or a protein produced from the viruses from the cell culture, wherein the virus is an influenza virus and the influenza virus used in step (b) is from a primary isolate that was pre-multiplied in cell culture to produce a pure isolate.

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